Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) An optoelectronic component comprising:

a semiconductor device comprising radiation-sensitive zones that are formed in silicon and configured to detect electromagnetic radiation; and

an optical element configured to focus the electromagnetic radiation in the radiation-sensitive zones, the optical element comprising a zone plate having structures with sizes on an order of magnitude of a wavelength of the electromagnetic radiation, and

wherein the radiation-sensitive zones are at varying distances from the optical element such that radiation-sensitive zones configured to detect shorter wavelengths of the electromagnetic radiation are at greater distances from the optical element compared to radiation-sensitive zones configured to detect longer wavelengths of the electromagnetic radiation.

2. (Canceled)

3. (Previously Presented) The optoelectronic component of claim 1, wherein the zone plate is incorporated in the semiconductor device.

4. (Previously Presented) The optoelectronic component claim 1, wherein at least one of the radiation-sensitive zones is configured to detect electromagnetic radiation having a wavelength between about 100 nm and about 5 micron.

5. (Previously Presented) The optoelectronic component of claim 4, wherein at least one of the radiation-sensitive zones is configured to detect electromagnetic radiation in the visible spectral region having a wavelength from about 400 nm to about 800 nm.

6. (Previously Presented) The optoelectronic component of claim 1, wherein a distance between the zone plate and-at least one of the radiation-sensitive zones is less than about 20 micron.

7. (Previously Presented) The optoelectronic component of claim 1, wherein:

a first one of the radiation-sensitive zones is configured to detect radiation with a wavelength lambda (λ); and

the zone plate is at a distance R from the first one of the radiation-sensitive zones and has a diameter D, wherein for a Fresnel number F of the zone plate: $F = \left(\frac{D^2}{\lambda R}\right) > 1$.

8. (Previously Presented) The optoelectronic component of claim 7, wherein a focal length of the zone plate for radiation with wavelength of about 550 nm is from about 1 micron to about 20 microns.

9. (Canceled)

10. (Previously Presented) The optoelectronic component of claim 1, wherein the radiation-sensitive zones are in corresponding focal planes of the zone plate for corresponding colors.

11. (Previously Presented) The optoelectronic component of claim 10, wherein the radiation sensitive zones comprise:

a first radiation-sensitive zone in a focal plane of the zone plate for wavelengths associated with red visible light;

a second radiation-sensitive zone in a focal plane of the zone plate for wavelengths associated with green visible light; and

a third radiation-sensitive zone in a focal plane of the zone plate for wavelengths associated with blue visible light.

12. (Previously Presented) The optoelectronic component of claim 1, wherein the zone plate comprises a layer included in the semiconductor device.

13. (Previously Presented) The optoelectronic component of claim 12, wherein the layer comprises a metallic layer.

14. (Previously Presented) The optoelectronic component of claim 1, wherein the zone plate comprises a first transparent material having an index of refraction (n_1) and a second transparent material having an index of refraction (n_2), n_1 being different than n_2.

15. (Previously Presented) The optoelectronic component of claim 14, wherein the first transparent material comprises a silicon oxide and the second transparent material comprises a silicon nitride.

16. (Previously Presented) The optoelectronic component of claim 1, wherein the zone plate comprises a structured layer included in the semiconductor device.

17. (Previously Presented) The optoelectronic component of claim 16, wherein the semiconductor device comprises an integrated circuit.

18. (Currently Amended) A method comprising:

using a zone plate to focus electromagnetic radiation into radiation-sensitive zones of a radiation-detecting semiconductor device, with said radiation-sensitive zones being formed in silicon,

wherein the radiation-sensitive zones are at varying distances from the zone plate such that radiation-sensitive zones configured to detect shorter wavelengths of the electromagnetic radiation are at greater distances from the zone plate compared to radiation-sensitive zones configured to detect longer wavelengths of the electromagnetic radiation.

19. (Previously Presented) The method of claim 18, wherein using the zone plate to focus electromagnetic radiation into the radiation-sensitive zones comprises:

using the zone plate to focus electromagnetic radiation with wavelengths associated with red visible light into a first radiation-sensitive zone;

using the zone plate to focus electromagnetic radiation with wavelengths associated with green visible light into a second radiation-sensitive zone;

using the zone plate to focus electromagnetic radiation with wavelengths associated with blue visible light into a third radiation-sensitive zone.

20. (Previously Presented) The optoelectronic component of claim 1, wherein the semiconductor device comprises a semiconductor chip.